



# How to Design Effective Blended Learning

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# Introduction

## What You Will Find in This Report

If your firm is like most organizations, you may already use a variety of delivery options for training: traditional classroom, asynchronous online courses, CD-ROM, video, self-study guides, as well as Web-based bulletin boards and e-mail for follow-up. You may also be experimenting with various forms of live distance learning: broadcasting seminars via the Internet or satellite, videoconferencing or teleconferencing. If you use two or more of these methods in conjunction with each other for training you are already delivering blended learning.

This How-To Guide is designed to help you optimize the use of blended learning to obtain the best results for specific audiences, content, available technology and organizational structures. To accomplish this objective we will cover:

- The learning delivery options currently available.
- The essential variables you need to examine to determine the most effective mix.
- Specific examples and case studies to show you “best practice” uses of blended learning.
- Helpful tips from the trenches to increase successful outcomes and avoid pitfalls.
- Tools to conduct your own analysis to arrive at the solution that will work best for your training needs.

## Blended Learning Is...

Blended learning is one of the leading trends in training today. While it is a fairly new term, the concept has been around for decades. Essentially, blended learning combines e-Learning tools (everything from video streaming over the Web to e-mail) with traditional classroom training to ensure maximum effectiveness. Students can prepare for, consolidate and recall classroom experiences online, while gaining the benefits of interaction with teachers and students via an actual or virtual classroom. Student learning and retention rates improve, without sacrificing the convenience, cost-effectiveness and customization of self-paced Web-based coursework.

Another way to think of blended learning is taking the best from self-paced, instructor-led, distance and classroom delivery to achieve flexible, cost-effective training that can reach the widest audience geographically and in terms of learning styles and levels. Each element becomes a part of a comprehensive workplace performance solution.

Blended learning options include:

### Live instructor-led

- Traditional classroom
- Virtual online classroom
- Live video via satellite or videoconferencing
- Online coaching/mentoring

### Self-paced learning

- Instructor-led classroom via e-mail

- CBT
- Study guides, manuals, texts
- Online resources and databases

### **Tools for building ongoing learning communities**

- Chat
- Instant messaging
- Newsgroups

## **A Sales Training Example**

Your organization has a nationwide salesforce and new products are introduced frequently. You are moving from a “product” orientation to “solution selling.” The salesforce needs to improve its knowledge of new product benefits and features as well as how to position these products together as a business solution.

### **Classroom Only Approach:**

A two-day new products course taught by regional sales managers is delivered in conjunction with a one-day classroom course on solution selling delivered by third-party vendors.

- Pro: Students enjoy interaction with other salespeople, teacher; they get an opportunity to role-play and ask specific questions.
- Con: Expensive; not appropriate for beginners or very experienced salespeople; those who can't attend don't receive training.

### **Self-Paced Online Only Approach:**

Self-paced new product training and an off-the-shelf solutions selling course is delivered online.

- Pro: Cost-effective; can take course at own pace; less disruptive; can “test-out” of sections or access remedial work.
- Con: Boring; being at desk is distracting; high rate of dropout; lack of role-play makes learning less valuable; inability to ask specific questions of experts.

### **Blended Approach**

New product training modules on positioning, features and benefits, and solution selling concepts modules are delivered as self-paced online pre-work. Students send in quizzes and questions to instructor before class begins via e-mail. Sales managers deliver a one-day class that focuses on solution selling, including role-playing based on scenarios provided in the pre-work. When the class is over, a solutions selling bulletin board and chatroom is established so students can ask questions and share tips. Appointments can be made with mentors who can provide coaching on specific accounts via teleconference or e-mail.

- Pro: Students get some interaction and direct face-to-face feedback in learning areas where it is most valuable; the pre-work helps even out the different student levels; program is more cost-effective and less disruptive than the classroom only approach; follow-up via bulletin boards, chats and online mentoring reinforces learning.

- Con: Requires design team that is familiar with both online and classroom delivery; must have appropriate technology and classroom logistics support; must have mechanism to ensure that students do pre-work.

## **Why E-Learning Isn't the Whole Solution**

For die hard proponents of e-Learning, the last few years have been somewhat disappointing. Even with the addition of Webinars and long distance labs via software like Placeware and Centra, the vast majority of corporate training is still conducted in classrooms by instructors.

Why is this?

Classroom training is social. Attending classroom training is often considered a perk. You get out of the office. You get a break in your routine. You get to meet your peers in person and share war stories. And, you get direct face-to-face feedback from experts.

In addition, most e-Learning is boring, requiring greater discipline on the part of the student. It's often hard to concentrate at your desk with frequent interruptions and distractions. And, it's hard to make sure a student has actually completed a course. While some organizations have online tracking systems, many depend on an honor system. The result is lower attendance and retention rates for most online training.

## **What Blended Learning Offers**

- Social benefits of classroom training focused on learning that gains the most from face-to-face interaction.
- Individualization benefits of self-paced, online learning for content that requires minimum interaction.
- Cost savings through minimizing time away from the job and travel/classroom/instructor expenses.
- Improved retention and reinforcement through follow-up mechanisms on the Web.
- Greater flexibility to meet the different learning styles and levels of your audience.

## **Part 1 — Blended Learning Options**

- **Options for Live Instruction**
- **Options for Self-Paced Learning**
- **Tools for Building a Learning Community**
- **Blended Learning: A Software Training Example**



## Options for Live Instruction

### Traditional Instructor-Led Classroom:

The instructor presents, demonstrates, discusses and interacts with students face to face. Students interact with each other face to face. Hands-on labs and exercises can be included. It can last as long as a half day to several days or even weeks.

- **Content:** Best for learning involving hands-on labs or role-plays; e.g., sales training, conflict resolution and complex technical training (particularly if it involves integration of different hardware and software).
- **Audience:** Best for employees involved in face-to-face roles (sales, supervisors) or IT (database administrators, systems administrators). Also important as motivation for employees who are isolated or need a break from high stress jobs (customer service, tech support).
- **Requirements:** Logistics for classroom deployment (especially for labs); traditional instructional designers; skilled instructors who can travel.

### Live Video

The instructor presents and demonstrates via dedicated high speed lines or satellite. Students use the telephone for questions to the professor or presenter. In addition, specially designed hardware is used for quizzes and polling questions.

- **Content:** Best for major announcements or new company initiatives—when it is valuable to bring a larger group together.
- **Audience:** Need to have access to a room hooked up to satellite or video conferencing. Provides some face-to-face interaction with other students, particularly if designed in conjunction with some exercises and discussion that can be facilitated by on-site coaches/mentors.
- **Requirements:** Satellite or video conferencing networking capabilities (or use of third-party vendor services) and special hardware and telephone lines for interaction between presenter and students. Instructional design and technical staff experienced with satellite/video conferencing broadcasts. Technical support during broadcasts.

### Live Instructor-Led Online Classroom (or Synchronous Web-Based Training)

Classes are short and focused, averaging approximately two hours. The instructor presents, demonstrates, discusses and interacts with students entirely through the Internet; usually includes full audio from instructor, PowerPoint or HTML presentation. Students can watch the instructor demonstrate software. Real time chat sessions are available for asking the instructor questions. White board capability is available for drawing and making points. Students can raise an electronic hand. The instructor knows who has questions and whether anyone thinks the instructor is going too fast or slow. The instructor can transfer control of the audio or visual to any student. Students can interact with other students in virtual “breakout” sessions. With some software (like Centra or Interwise) hands-on labs can be provided. Most synchronous products that operate entirely through the Internet do not include video at this time. Training institutions that want to add video will combine the above discussed virtual classroom with a satellite feed for video of the instructor. Some virtual classroom products include video via the Internet today, but they typically require more bandwidth than users have.

- **Content:** Best for less complex content, content that can be delivered in a shorter amount of overall time, or in shorter chunks over several weeks. Examples include new product introductions, technical overviews, changes in policies and procedures, and new hire question and answer sessions with senior management.
- **Audience:** Must have Internet access, be comfortable receiving training via the computer; be motivated and not easily distracted; especially helpful for audiences dispersed nationally or world-wide.
- **Requirements:** Organization must select, purchase and deploy software such as Placeware, WebEx, Centra. When doing distance labs each student also needs to have a copy of the appropriate software. Instructional designers and production staff with expertise in live online broadcasting are required. Instructors need to be trained to deliver content online. Students need to have basic training in the features of the software before participating. Technical support required during broadcast.

### Online Coaching and Mentoring

Online coaches can mentor students throughout the learning process – during pre-work, the class itself, and as follow-up. The coaches should be experienced in the technology being used, in addition to acting as a guide to the content. The coaches instruct, answer questions, clarify concepts and help students with challenges. They may or may not be the primary course instructor. The coaches are accessed live via the Internet through chat or via teleconferences or asynchronously via e-mail or discussions boards.

- **Content:** Especially helpful during live online classes to answer chat questions or run “break out” sessions. Also helpful for explaining exercises and labs, for facilitating chat sessions, and to provide follow-up and reinforce learning.
- **Audience:** Must have Internet access, be comfortable with e-mail, chat and discussion boards.
- **Requirements:** Employees must have intranet and Internet access. Coaches need to be trained in the technology being used and be effective communicating via the Internet.

## Options for Self-Paced Learning

### Instructor-Led Classroom Via E-mail

Instructor uses e-mail to assign the self-paced components. This format often uses self-paced CBTs but does not require them. Some organizations simply distribute documents via the Internet and e-mail or post reading assignments. Students feel they are a part of a learning community even though they have little or no live interaction with an instructor. In many cases, classes begin on set dates with a set number of students participating. Students can be located anywhere, because they take all classes and assignments via e-mail. A syllabus is e-mailed after registration. It defines all computer-based training (CBT) reading assignments, exercises and quizzes.

- **Content:** Best for material that is most effectively delivered in chunks over a period of time and that requires significant self-study. Examples are learning complex software, a programming language, accounting skills.
- **Audience:** Must have Internet access, be comfortable learning independently, and be highly motivated.
- **Requirements:** Internet access.

### Computer-Based Training (CBT, WBT, or TBT)

Self-paced computer-based training (CBT) can be delivered online, on CD-ROM, or downloaded to the student's hard drive. CBT is often referred to as Web-based training (WBT) or technology-based training (TBT). Typical CBTs incorporate graphics, text and often audio to present lessons in a more interesting and interactive format than a book. The lessons are 100% self-paced but vary significantly in quality of content and delivery. A well-designed CBT provides excellent instruction that is well paced and interesting. A poorly designed CBT is little more than a document or book that was converted to delivery online.

- **Content:** Best for learning concepts, principles, policies and facts. Examples are software architecture, market analysis, safety rules, and quality control procedures. Most effective when information can be delivered concisely. Animations can be very effective for demonstrating scientific or technical processes. Also can be re-purposed for performance support once the class is completed.
- **Audience:** Must have access to Internet/intranet or CD-ROM drive, be comfortable learning via the computer, be highly motivated, and able to work independently.
- **Requirements:** Hardware platform robust enough to deliver multimedia CBT with sound, graphics and possibly video, headphones if students work in groups, and appropriate plug-ins and installed software for all participants.

### Self-Paced Study Guides, Manuals, Texts, Job Aids

Print materials are often used as part of the blended learning mix. They are an easy, familiar and effective method to deliver content, particularly when a greater amount of text is necessary.

- **Content:** Best used for concepts, principles and procedures that require more text for explanation such as detailed technical instructions that cover many functions and tasks. It can also be very useful for presenting case studies, exercises and ancillary materials. It's often used as performance support on the job.
- **Audience:** Especially good for students who prefer to read text in print rather than on a computer screen or students unfamiliar or uncomfortable with learning via the computer.
- **Requirements:** Traditional instructional designers/technical writers/desktop publishing capabilities.

### Online Documents and Databases

The Internet offers thousands of online documents that can be incorporated into the learning process. Typically students are assigned research projects to search the Internet for data, much like searching in a library. Special databases of information regarding the course content can also be developed.

- **Content:** Best used for subjects where research is required; e.g., analyzing the market, competitive products or studies on cancer research related to new pharmaceuticals.
- **Audience:** Usually analysts or researchers.
- **Requirements:** Internet access; students need advanced search engine skills; database programmers are required to design specialized databases.

## Tools for Building a Learning Community

### Chat

Each participant is live on the Internet typing questions, answers and messages while the others see what is being typed. Students see what the others type as soon as they type it. There is no audio. Chat sessions that discuss specific topics can be scheduled and students can participate on demand or as assigned.

- **Content:** In addition to use during Web classes, chat can be an excellent means for students to keep in touch with each other, discuss issues, exchange tips and solve problems. Chat can be facilitated by a coach or not, and it can be scheduled to focus on different issues of concern. Students or instructors can schedule new chat topics as the need and interest arises.
- **Audience:** Students must have Internet access and be comfortable in an online chat room. It's important to establish rules so that one person cannot dominate the chat.
- **Requirements:** Students must have chat capability via intranet or a third-party Internet provider.

### Instant Messaging

This tool is similar to chat except that it is used in a less structured manner. All participants keep their instant messaging on at all times. They can see at any time other students in the class who are working online and send or respond to a quick question from students or support personnel as they study.

- **Content:** It's a more informal interaction than chat. It's especially good for getting quick answers to questions.
- **Audience:** Students must have Internet access and be comfortable using instant messaging.
- **Requirements:** Students and instructor must have instant messaging capability via intranet or a third-party Internet provider.

### Newsgroups

Newsgroups, bulletin boards or discussion groups are available online anytime. Students can post a question about the class or read and answer questions asked by others.

- **Content:** Effective as a means of ongoing communication between students and instructor. Questions can be answered, issues and concerns raised, and students and the instructor can respond to each other on a variety of topics.
- **Audience:** Students must have access to bulletin boards or discussion groups via intranet or a third-party Internet provider.
- **Requirements:** Students must have intranet or a third-party Internet provider.

## Blended Learning: A Software Training Example

Your organization needs to move 2,700 employees located in eight offices from GroupWise 4 to Lotus Notes 5 over one weekend. On Monday morning after the switch, each person must be able to collaborate at a basic level with clients and with each other. Your organization also wants people to fully utilize the capability of Notes Mail, Scheduling and Contacts soon

thereafter. Here is a sample solution blending traditional learning methods with new e-Learning ideas:

### **Introducing the Move-Over**

- Strategic voice mail message from managing partner highlights the benefits of the project (starting three weeks before the switch).
- Daily splash screen with update about project (starting three weeks before the switch).
- Series of tactical messages from the CIO helps people prepare for the conversion and switch (starting three weeks before the switch).

### **Lotus Notes 5 Training**

- Virtual Webcasts worldwide over the intranet including a live instructor and interactive question and answer period (starting two weeks before the switch).
- Written survival guide with tips, tricks and common tasks (starting two weeks before the switch).
- Third-party generic, Web-based, self-paced training on Lotus Notes.
- Multiple instructor-led, hands-on workshops (starting the day after the switch).

### **Post-Training Support and Reinforcement**

- Frequently asked questions on the intranet updated as needed.
- Intensive floor support (starting day after the switch).
- Online chat sessions and/or newsgroups to post questions, share information, solve problems, and spread tips and shortcuts.

## **Part 2 — Determining the Best Blended Learning Mix**

- **Target Audience Description**
- **Skills/Content**
- **Technical Resources**
- **Personnel Resources**
- **Time/Budget Constraints**
- **Designing Your Blended Learning Courseware**

## Needs Assessment

To determine the most effective blended learning mix for your training project, you will need to gather information regarding the following:

- Target audience description
- Skills/content
- Technical resources
- Personnel resources
- Budget/time constraints

The tables on the next few pages indicate the type of information you will need to gather.

## Target Audience Description

It is critical to know as much as possible about your target audience when designing blended learning. In particular, you will need to know their familiarity and comfort level with learning via computers.

|  |  |
|--|--|
| Primary audience   |  |
| Secondary audience   |  |
| Number to be trained   |  |
| Duration of training requirement                                   |  |
| Location of learners   |  |
| General skill, experience and knowledge level                      |  |
| Preferred learning methods   |  |
| Relevant skill mix   |  |
| Language/cultural issues   |  |
| Motivation to learn  |  |
| Comfort level/experience learning via computers                    |  |
| Access to computer?<br>Intranet? Internet?<br>Satellite broadcast? |  |
| Access to labs?  |  |
| Available to travel to classroom training?                         |  |



## Skills/Content

The type of skills and content your learners need to master will greatly influence the delivery methods you select. Some skills require interaction with an instructor, while others are best learned in a self-paced environment. By matching the content carefully with the methods available you will ensure the effectiveness of your courseware.

|  |  |
|--|--|
| Performance goals                                    |  |
| Learning objectives                                  |  |
| High level content outline                           |  |
| Complexity, difficulty and length of content         |  |
| Involves equipment                                   |  |
| Requires labs  |  |
| Requires role-plays                                  |  |
| Requires teamwork                                    |  |
| Requires face to face interaction                    |  |
| High value to organization/high consequence of error |  |
| Changes frequently or is relatively stable           |  |
| Includes factual or procedural information           |  |

## Technical Resources

Blended learning depends on your organization's technical resources. Carefully cataloguing what your organization does and does not have will narrow down the choices available to you and help you avoid making costly mistakes.

|   |  |
|---|--|
| Do learners have intranet/Internet access?  |  |
| Do learners have sound cards in their computers?  |  |
| Do learners have access to headsets or microphones and speakers?  |  |
| The organization's slowest Internet connection speed is   |  |
| Can learner's computers play full multimedia CBT?   |  |
| Do learners have access to chat? Instant messaging? Newsgroups?   |  |
| Does the organization have access to satellite broadcasting or videoconferencing?                           |  |
| Has the organization purchased and deployed synchronous Web broadcasting software like Placeware or Centra? |  |
| If distance labs are contemplated, do learners have the appropriate hardware and software?                  |  |
| Does the organization have a learning management system? If so, what tools are compatible?                  |  |

## Personnel Resources

Your choices will also be influenced by the personnel resources available for development, delivery and technical support. If your staff is not experienced with e-Learning methods, you may want to provide some training and begin with the options that are easiest to design and roll out—such as online discussion and chat groups. Another alternative is using third-party vendors for some aspects of your project.

|   |  |
|---|--|
| Expertise in traditional classroom instructional design                     |  |
| Instructors with content knowledge available to travel                      |  |
| Technical support for equipment and labs associated with classroom training |  |
| Expertise in asynchronous and synchronous online instructional design       |  |
| Expertise in asynchronous and synchronous online production                 |  |
| Instructors with content knowledge and online expertise                     |  |
| Technical support for asynchronous and synchronous online training          |  |
| Expertise in instructional design for satellite broadcasts                  |  |
| Expertise in satellite broadcast production                                 |  |
| Technical support for satellite broadcasts                                  |  |

## Time/Budget Constraints

In the real world, there are always budget and time constraints that must be considered in choosing your blended learning mix. If you only have a couple of weeks to develop and deliver content, you will probably not choose custom CBT or a satellite broadcast. On the other hand, if the project is high profile and the content is stable, those may be appropriate methods. Always remember to consider maintenance costs and timeframes as part of the constraints you will need to manage.

|   |  |
|---|--|
| Time available for training delivery      |  |
| Time available for training development   |  |
| Time available for course maintenance     |  |
| Budget available for training delivery    |  |
| Budget available for training development |  |
| Budget available for course maintenance   |  |

## **Designing Your Blended Learning Courseware**

Once you have gathered the information you need on your audience, the course content, your organization's technical and personnel resources, and the time and budget constraints, you are ready to design your blended learning courseware. The following chart can help you select the most effective blended learning mix for your course.

| Delivery Options                | Audience   | Skills/Content   | Technical Resources  | Personnel Resources   | Budget Time Constraints  |
|---------------------------------|--|--|--|---|--|
| <b>Traditional classroom</b>    | <ul style="list-style-type: none"> <li>Prefer face-to-face interaction;</li> <li>Available for longer time frames</li> <li>Low numbers</li> <li>Centralized</li> <li>Low to high motivation</li> <li>Lack computer experience</li> </ul>                             | <ul style="list-style-type: none"> <li>Frequent changes</li> <li>Interpersonal</li> <li>Highly complex</li> <li>Requires hands-on labs/exercises</li> <li>Requires longer time frames</li> <li>Incidental learning anticipated</li> <li>Team learning important</li> </ul> | <ul style="list-style-type: none"> <li>Equipment for labs</li> </ul>   | <ul style="list-style-type: none"> <li>Instructors available for travel</li> <li>Technical support to set up and support labs</li> <li>Logistics support</li> <li>Desktop publishing</li> </ul>   | <ul style="list-style-type: none"> <li>Medium development time</li> <li>Medium budget for development</li> <li>Longer time for delivery</li> <li>Larger budget for delivery</li> <li>Low budget/time for maintenance</li> </ul>  |
| <b>Virtual online classroom</b> | <ul style="list-style-type: none"> <li>Have Internet access/ experience with computers</li> <li>High motivation</li> <li>Dispersed locations</li> <li>Want interaction with instructor and other students</li> <li>Need training on software before using</li> </ul> | <ul style="list-style-type: none"> <li>Frequent changes</li> <li>Less complex</li> <li>Requires shorter time frames</li> <li>Interaction and ability to get questions answered immediately important</li> </ul>  | <ul style="list-style-type: none"> <li>Virtual classroom software deployed</li> <li>For some virtual labs students must have software on their hard drives</li> <li>Computers with soundcards, chat and headphones for students</li> </ul> | <ul style="list-style-type: none"> <li>Instructors familiar with software/ presenting online</li> <li>Instructional design/ production staff for development and broadcast</li> <li>Tech support staff before/during broadcast</li> </ul> | <ul style="list-style-type: none"> <li>Budget for software purchase and deployment</li> <li>Short development time</li> <li>Low development budget</li> <li>Short delivery times</li> <li>Low maintenance costs and time</li> <li>Program can be captured and made available on demand via the Web.</li> </ul> |

| Delivery Options                                     | Audience  | Skills/Content  | Technical Resources   | Personnel Resources   | Budget Time Constraints   |
|--|---|---|---|---|---|
| <b>Live video via satellite or videoconferencing</b> | <ul style="list-style-type: none"> <li>Access to satellite broadcast or video conferencing</li> <li>Low to high motivation</li> <li>Dispersed locations</li> <li>Want some interaction with instructor, other students</li> <li>Need training on special hardware before using</li> </ul> | <ul style="list-style-type: none"> <li>Best for major announcements and new initiatives</li> <li>Having a larger group is beneficial</li> <li>Requires shorter time frames</li> <li>Facilitators can run break-out sessions</li> <li>Interaction and ability to get questions answered immediately important</li> </ul> | <ul style="list-style-type: none"> <li>Satellite or video conferencing networking capabilities</li> <li>Special hardware/ telephone lines for interaction</li> <li>Video production capabilities</li> </ul> | <ul style="list-style-type: none"> <li>Instructors familiar with live broadcasting and using special hardware and phone lines.</li> <li>Instructional designers familiar with broadcast capabilities</li> <li>Video and satellite production staff</li> <li>Tech support staff before and during broadcast</li> </ul> | <ul style="list-style-type: none"> <li>Budget for initial satellite/ videoconferencing purchase or leasing</li> <li>Medium development time</li> <li>Medium development budget</li> <li>Short delivery times</li> <li>One-time only delivery</li> <li>Broadcast can be captured and distributed on videotape</li> </ul> |
| <b>Online coaching/ mentoring</b>                    | <ul style="list-style-type: none"> <li>Access to intranet/ Internet</li> <li>Comfortable with e-mail, chat, discussion boards</li> </ul>  | <ul style="list-style-type: none"> <li>Helpful in conjunction with virtual classes to answer chat questions</li> <li>Helpful for providing follow-up and reinforcement</li> </ul>   | <ul style="list-style-type: none"> <li>Intranet/Internet access</li> </ul>  | <ul style="list-style-type: none"> <li>Coaches need training in software being used</li> <li>Comfortable with online communication</li> </ul>   | <ul style="list-style-type: none"> <li>Low budget</li> <li>Low development</li> <li>Low maintenance</li> </ul>  |
| <b>Instructor-led classroom via e-mail</b>           | <ul style="list-style-type: none"> <li>Access to intranet/Internet</li> <li>High motivation</li> <li>Dispersed locations</li> <li>Comfortable learning via computers</li> </ul>   | <ul style="list-style-type: none"> <li>Can be delivered in lessons over weeks or months</li> <li>Requires significant self-study</li> </ul>   | <ul style="list-style-type: none"> <li>Intranet/Internet access</li> </ul>  | <ul style="list-style-type: none"> <li>Instructors comfortable with online communications</li> <li>Instructional designers familiar with online capabilities</li> </ul>   | <ul style="list-style-type: none"> <li>Low budget</li> <li>Low development</li> <li>Low maintenance</li> </ul>  |

| Delivery Options                      | Audience   | Skills/Content  | Technical Resources  | Personnel Resources   | Budget Time Constraints  |
|---------------------------------------|--|---|--|---|--|
|                                       | <ul style="list-style-type: none"> <li>Ability to work independently</li> <li>Want some learning community</li> </ul>  |   |  |   |  |
| <b>CBT/WBT</b>                        | <ul style="list-style-type: none"> <li>Access to intranet/Internet</li> <li>High motivation</li> <li>Dispersed locations</li> <li>Comfortable learning via computers</li> <li>Ability to work independently</li> </ul> | <ul style="list-style-type: none"> <li>Best for learning concepts, principles, policies, faces</li> <li>Information needs to be delivered concisely, doesn't require a lot of text</li> <li>Use of multimedia adds value</li> <li>Can be re-purposed as help/performance support</li> </ul> | <ul style="list-style-type: none"> <li>Access to multimedia hardware platform</li> <li>Access to appropriate plug-ins, headsets, software</li> </ul> | <ul style="list-style-type: none"> <li>Instructional designers/production staff familiar with online capabilities</li> <li>Tech support for rollout and to support users</li> </ul> | <ul style="list-style-type: none"> <li>Medium to high budget</li> <li>Medium to long development time</li> <li>Medium to high maintenance budget/time</li> </ul> |
| <b>Study guides, manuals, texts</b>   | <ul style="list-style-type: none"> <li>Prefer to read print</li> <li>Unfamiliar or uncomfortable with computers</li> </ul>   | <ul style="list-style-type: none"> <li>Best for learning concepts, principles, policies, faces</li> <li>Information may require a lot of text</li> <li>Use of static graphics adds value</li> <li>Can be re-purposed as job aids</li> </ul>   | <ul style="list-style-type: none"> <li>None</li> </ul>   | <ul style="list-style-type: none"> <li>Traditional instructional designers, technical writers, desktop publishing staff</li> </ul>  | <ul style="list-style-type: none"> <li>Low to medium budget</li> <li>Short to medium development time</li> <li>Low to medium maintenance costs/time</li> </ul>   |
| <b>Online resources and databases</b> | <ul style="list-style-type: none"> <li>Access to intranet/Internet</li> <li>Advanced search engine skills</li> <li>Usually analysts, researchers</li> </ul>  | <ul style="list-style-type: none"> <li>Requires extensive research</li> </ul>   | <ul style="list-style-type: none"> <li>Intranet/Internet access</li> </ul>   | <ul style="list-style-type: none"> <li>Database designers/programmers for custom databases</li> </ul>   | <ul style="list-style-type: none"> <li>Medium to high budget</li> <li>Medium to long development time</li> <li>Medium to high maintenance budget/time</li> </ul> |



| Delivery Options                         | Audience  | Skills/Content   | Technical Resources   | Personnel Resources  | Budget Time Constraints  |
|--|---|--|---|--|--|
|  | <ul style="list-style-type: none"> <li>Dispersed locations</li> </ul>   |  |   |  |  |
| <b>Chat/instant messaging/newsgroups</b> | <ul style="list-style-type: none"> <li>Access to intranet/Internet/chat/instant messaging</li> <li>Comfortable using chat/instant messaging/newsgroups</li> </ul> | <ul style="list-style-type: none"> <li>Asking questions, exchanging tips, solving problems with other learners/coach/instructor</li> </ul> | <ul style="list-style-type: none"> <li>Intranet/Internet/chat instant messaging/newsgroup access</li> </ul> | <ul style="list-style-type: none"> <li>Coaches/instructors comfortable with online communications</li> </ul> | <ul style="list-style-type: none"> <li>Low budget</li> <li>Low development</li> <li>Low maintenance</li> </ul> |

## Part 3 — Blended Learning Case Studies

- **Oracle**
- **Bechtel**
- **Summary**

## **Oracle**

### **Using Blended Learning for Customer IT Training**

Oracle Corporation, the largest provider of software for e-business, is also the world's second largest provider of IT training. In 1999, most Oracle customer training was taught in the classroom. The only other alternative available was self-paced courseware on CD-ROM. Industry trends indicated customer concerns with both delivery methods. Many customers wanted to reduce the time spent away from the job. At the same time, some customers had difficulty learning the material with completely self-paced courseware because of the lack of interaction with an instructor. Oracle management responded by developing new methods to deliver training. Now customers have more choices: classroom-only courses, self-paced online courses, a subscription to the online Oracle Learning Network, and e-Learning FastTrack courses that use a blended approach.

E-Learning FastTrack currently consists of twelve week courses for IT professionals who need to:

- Quickly and conveniently come up to speed on new Oracle products.
- Transition to an Oracle environment after working with other technologies.
- Pass the examinations to become Oracle certified.

While customers are the primary audience, Oracle employees can also participate.

### **Course Design and Development Process**

The project team, led by curriculum manager David Klein, wanted to combine the interactivity of the traditional classroom with the flexibility of self-paced online courseware. David and his instructors carefully reviewed the existing classroom materials in order to map the content to the appropriate delivery methods. They also reviewed the available technology, Contigo/Evoke virtual classroom software and the Oracle I-Learning Management System, to learn how to take advantage of their features and functionality. Their review and design process produced a complete blended curriculum of self-paced and interactive training with the following components:

#### **Online Study Guide**

The Oracle University online study guide, available on the Oracle Learning Network (OLN), was created using the Oracle iLearning Management System, a product that is also available to customers. The online study guide is organized according to each week of study. It prescribes the learning activities students are required to participate in each week and directs them throughout the entire twelve-week e-Learning course. All course materials are accessible within the study guide including the week 1 and week 12 course materials.

#### **Classroom Training**

Classroom training is a live event that students attend in person during the first and last week of the course. It enables students to learn from an expert instructor, gain hands-on experience, learn from peers, and have their questions answered immediately.

During the first week students are introduced to the e-Learning environment, receive student guides, software, and any other related materials, including Oracle certification vouchers. In addition, the instructor makes sure all students are signed onto the Oracle Learning Network (OLN) to get access to the online study guide.

Week 12 is designed as a workshop to bring together all the previous 11 weeks of training. The focus is on labs that apply knowledge to complex, real world situations.

### **Technology-Based Training**

Technology-based training (TBT) is self-paced learning delivered on a CD-ROM and/or over the Internet. The TBT presents units and lessons of content and involves students in practice activities that help reinforce what they have learned. TBTs give students the flexibility to learn at their own pace – anytime, anywhere. It also allows the students to review concepts and practices as often as they like.

### **ESeminars**

ESeminars are short classes delivered over the Internet using Contigo/Evoke software that may involve streaming video but always include streaming audio and presentation materials.

ESeminars are used at the beginning of each self-study week to present a brief overview of the weekly activities and are usually 10 to 20 minutes in length. The seminars are provided as RealAudio replays, which allow students to fast forward or rewind the presentation. Weekly previews for all self-study weeks are available from the first day of the track, giving students the ability to play the weekly preview at any time.

ESeminars involving streaming audio are also used to demonstrate tasks, functionality, navigation through screens, application demos, etc. They are recorded either in Oracle's production studio, remotely using Oracle's studio for recording, or remotely without studio production. (The presenter uses audio equipment for recording at his or her desktop).

A live eSeminar, known as a "special session" may be held from time to time at the discretion of the instructor. These are held to cover additional material or provide additional explanation of existing material. They are excellent for increasing attendance during a specific office hour and are well received by the students.

### **Labs and Practices**

Labs and practices are hands-on activities that allow students to practice creating, maintaining and troubleshooting Oracle technologies. They provide safe environments in which students can perform realistic job tasks. The simpler labs that focus on factual, step-by-step procedures are part of the self-study week activities. Complex real world scenarios that involve analysis such as machine break-downs, back-up and recovery, and situations involving multiple platforms and products are part of the last week classroom workshop.

### **Instructor Office Hours**

Instructor office hours are live, interactive, Internet-based and telephone-based events using Contigo/Evoke software and involving students and the instructor. They are offered during weeks 2, 5, 8 and 11 and are held for two hours twice daily, Monday through Friday. During office hours, the instructor will function as a tutor by answering questions and building a strong learning relationship through feedback and suggestions. Students are encouraged to

freely ask questions. The instructor may utilize application sharing to demonstrate specific features and to answer specific questions.

### **Special Sessions**

Special sessions are live eSeminars that may be held to cover additional material or provide additional explanation of existing material. They may be held at the request of a student or at the discretion of an instructor. All materials for a special session will be provided and maintained by the instructor. Special sessions occur during normal office hours and provide the same capabilities.

### **Discussion Forums**

Each class will have a discussion forum (bulletin board or newsgroup) available that will allow the instructor and students to post questions and comments. A discussion forum is not synchronous communication, but it does enable students to share knowledge and experience with peers informally, at their own pace. The instructor may also use the forum to post late breaking information related to the course of study or general administrative details.

### **Supplemental Information**

There is a supplemental information section in the study guide that provides resources to help students gain a greater understanding of the course materials. For example, they may include white papers, additional Web sites or books.

### **Oracle Certification Program Practice**

The study guide provides links to any available material to help the student prepare for the OCP exams. This may include practice exams or eClasses that provide instructional review of the course materials.

### **Post-Course Reinforcement**

For six months from the eFastTrack start date, students have access to recorded eSeminars, online forums and specific TBTs to refresh or reinforce learning. The content available is continually refreshed by the Oracle staff.

The course design process began in December 1999 and took three weeks to complete. During that time the team also trained the other instructors on the Contigo/Evoke software. Once the team and instructors were familiar with the new technology, the development process took three months and was relatively easy. Oracle already had the personnel and technology resources to implement the program. The team simply needed to coordinate the efforts of the groups involved. Because management fully supported the project the obstacles were minimal. The pilot was held in April 2000, and the program was rolled out in June 2000. Along the way, improvements were made based on student and instructor feedback.

### **Lessons Learned**

#### **1. Students Needed Additional Catch-Up Time to Successfully Complete the Course**

Initially the course was designed to last for 10 weeks. Student feedback after the pilot indicated difficulty maintaining full-time jobs and completing course work in this time frame. In particular, students had difficulty with week 2. After being away from their jobs for week 1, they needed more time to catch up with their regular responsibilities. So the team reduced the amount of content covered and designed week 2 to focus primarily on software installation and set up. In addition, this schedule change enabled students to digest the material learned during the first week and get their questions answered during instructor office hours.

The team also added an additional "off week" to the course to account for vacations, holidays, and special emergencies. By expanding the course schedule, the team enabled more students to complete the course successfully.

| 12 Week Track |        |        |        |        |        |        |        |        |        |         |         |         |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
|               | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 |
| ILT           | ✓      |        |        |        |        |        | *Off   |        |        | *Off    |         | ✓       |
| OH            |        | ✓      |        |        | ✓      |        | *Off   | ✓      |        | *Off    | ✓       |         |
| eClasses      |        | ✓      | ✓      | ✓      | ✓      | ✓      | *Off   | ✓      | ✓      | *Off    | ✓       |         |
| TBT           | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | *Off   | ✓      | ✓      | *Off    | ✓       | ✓       |
| Forums        | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | *Off   | ✓      | ✓      | *Off    | ✓       | ✓       |

\* Off Week: No scheduled events for this week. Recorded eClasses, TBT and Online Forums are still available and continued self-paced study is strongly recommended.

## 2. Instructor Office Hours Need to Be Frequent and Flexible

Initially the design team thought that students should have individual sessions with instructors during the self-study weeks. However, during the pilot students were often unavailable and sessions didn't take place. To correct this problem, instructors now have office hours for two hours twice a day during Weeks 2, 5, 8, and 11. Students can interact with instructors via Contigo/Evoke software during these times as much as they need to. With this approach students actually get more individual attention than they do in a traditional classroom because there are usually no more than 10 students "visiting" an instructor at any one time.

## 3. Recording eSeminars for RealAudio Playback Improved Quality and Increased Distribution Options

For the pilot, the team recorded the eSeminars using the Contigo/Evoke software only. However, there were some concerns with this approach. The quality was not good enough. Streaming video could not be used. And even more important, the replays could only stream from a Contigo server. To overcome these problems, the team decided to record audio and video that could be played back with a RealAudio plug-in. In some cases, they used their production studio at Oracle for recordings, transferring the audio from DAT tape. Other recordings were captured remotely from the Oracle studio using phone lines. In some cases the presenters simply used a headset and mike that could be plugged in to their own desktop computer. The result was a more flexible learning product that could be delivered via the Internet, downloaded to a hard drive, or via CD-ROM. In addition, the improved audio quality increased student interest and retention levels.

## **Results**

E-Learning FastTrack Courses have been a resounding success with students, instructors and management. Many participants have been certified and gotten promotions as a result of participation. Instructors—initially skeptical—have seen that blended learning can be effective and are enjoying the benefits of less travel. And, the program is a financial success. Rather than cannibalizing existing classroom training, it has increased the audience for Oracle's IT offerings. Initially rolled out in the U.S., the program is now available in Europe, Asia/Pacific and Latin America, with local instructors teaching in their own languages.

So what were the keys to success? "Management buy-in," says David Klein. "They removed the roadblocks. And having a small team of very good people....The smaller the better."

His advice to other training professionals developing blended learning? "Go for it!"

## **Bechtel**

### **Using Blended Learning to Teach Finance to Managers**

How do you teach finance to a sophisticated, very busy management audience with widely varying financial skills located in countries around the world? This was the challenge faced by the Learning Development department headed by training manager Dennis Morin.

The design team, including key stakeholders and subject matter experts, decided to use a blended learning approach to achieve the following objectives:

- Minimize the time managers would be away from their jobs and in the classroom.
- Reduce the managers' skill variation by providing self-paced pre-work on basic finance facts and concepts.
- Better utilize classroom time for business simulations that apply finance to real world situations.
- Engage managers in the e-Learning process through first-hand experience.
- Re-purpose sections of the program to train other employee groups.

The high level instructional design involved using self-paced CBT to teach basic finance concepts as pre-work. As a result, participants could concentrate on Bechtel specific case studies and simulations in the five day instructor-led portion of the course. It was estimated that this approach reduced the classroom time necessary by one and a half days.

### **Buy or Build?**

The next decision was whether to buy off-the-shelf CBT or build a custom program. Dennis involved the subject matter experts and key stakeholders in the review of existing software to determine which would be the best approach. At the same time, the key stakeholders and subject matter experts had a chance to test out and become familiar with different e-Learning programs.

After reviewing available off-the-shelf courseware, the team decided to purchase the SkillSoft course. Some of the features that impressed the team were:

- User friendly interactive design and flexible navigation appropriate for adult learners.
- Pre- and post-testing system for self-assessment. (Managers could "test out" of modules if they knew the material).
- Ability to download and run off-line as well as online.
- Technically accurate content.

In addition, the team knew that technical problems would be minimal because Bechtel had had already successfully deployed SkillSoft courseware worldwide.

### **Rolling Out the E-Learning Pre-Work**

The SkillSoft courseware was made available to participants a month before the class was scheduled. Each student needed to get 80% or better on a test based on the pre-work to participate in the class. Most of the participants had never taken an online course before. To prepare them and avoid difficulties, the team developed and distributed a job aid for logging onto the Internet and the courseware. There was also technical support available by phone



or e-mail if any participants had difficulty. The team monitored the student's progress via the Docent learning management system and prompted students as needed.

### **Managers Reactions**

And how did this audience react to a blended learning approach? Based on informal and formal evaluations, the reaction of participants has been very positive. Managers have been pleasantly surprised at how much they've learned during the pre-work and appreciated the reduced time away from the job.

## Summary

The primary goal of blended learning is to combine the interactivity of instructor-led training, the flexibility of self-paced learning, and online tools for building a learning community. In this How-To Guide you have reviewed delivery options, “best practice” examples, tips and tools for designing effective blended learning courseware. The following will summarize the key steps you should take to obtain the best results for any project:

### 1. Familiarize yourself with the blended learning delivery options.

- Live instructor-led: Traditional classroom; virtual online classroom; live video via satellite or videoconferencing; online coaching/mentoring.
- Self-study: Instructor-led classroom via e-mail; CBT (also known as TBT or WBT); study guides and manuals; online resources and databases.
- Tools for building a learning community: chat, instant messaging; newsgroups or bulletin boards.

### 2. Assess your organization’s technical and personnel resources.

- Catalogue the technology and personnel your organization does and does not have to narrow down the choices available to you. This will help you avoid making costly mistakes. If there are resources to purchase new technology, train your staff or use third-party vendors, and build those expenses and activities into your project plan.

### 3. Understand your audience needs, skills and preferences.

- Make sure you know your audience’s familiarity and comfort level with learning via computers. Also consider their social needs and motivation level as you design your courses.

### 4. Analyze the skills and content to be delivered in your course.

- Some skills require interaction with an instructor, while others are best learned in a self-paced environment. Match the content carefully with the methods you incorporate into your course to ensure maximum retention and skill attainment.

### 5. Be realistic about your budget and time constraints.

- In the real world there are always budget and time constraints that must be considered in designing any courseware. Always remember to consider maintenance costs and timeframes as part of the constraints you will need to manage.

### 6. Design the appropriate blended learning mix.

- Once you have gathered the necessary information on your audience, the course content, your organization’s technical and personnel resources, and the time and budget constraints, you are ready to design effective blended learning courseware.